

Claims

- [c1] A method of determining inductance of wires in an electronic design, said method comprising:
- selecting a pair of wires;
 - adding concentric ring lines to said design to divide said pair of wires into wire segments;
 - adding straight line segments representing each wire between points where each corresponding wire crosses said adjacent ring lines; and
 - calculating a mutual inductance between said straight line segments, wherein said mutual inductance of said straight line segments comprises an approximate mutual inductance of said wires.
- [c2] The method in claim 1, further comprising repeating said selecting, replacing and calculating for each pair of wires that cross said adjacent ring lines.
- [c3] The method in claim 1, further comprising repeating said selecting, adding straight line segments, and calculating processes for each pair of said adjacent ring lines.
- [c4] The method in claim 1, wherein said calculating process reduces said inductance based on the angle by which

said straight line segments deviate from being parallel to one another.

- [c5] The method in claim 1, wherein said concentric rings all have the center of said circuit design as their center.
- [c6] The method in claim 1, wherein the center of said concentric rings changes for each different pair of wires.
- [c7] The method in claim 1, wherein said concentric rings are equally spaced from one other.
- [c8] The method in claim 1, wherein each of said straight lines run from a point where a corresponding wire crosses an outer concentric ring line to a point where said corresponding wire crosses an inner concentric ring line.
- [c9] A method of determining inductance of wires in an electronic design, said method comprising:
 - selecting a pair of wires;
 - adding concentric ring lines to said design to divide said pair of wires into wire segments;
 - adding straight line segments representing each wire between points where each corresponding wire crosses said adjacent ring lines; and
 - determining a mutual inductance between said straight line segments by referring to a pre-

calculation table, wherein said mutual inductance of said straight line segments comprises an approximate mutual inductance of said wires.

- [c10] The method in claim 9, further comprising repeating said selecting, replacing and calculating for each pair of wires that cross said adjacent ring lines.
- [c11] The method in claim 9, further comprising repeating said selecting, adding straight line segments, and calculating processes for each pair of said adjacent ring lines.
- [c12] The method in claim 9, wherein said calculating reduces said inductance based on the angle by which said straight line segments deviate from being parallel to one another.
- [c13] The method in claim 9, wherein said concentric rings all have the center of said circuit design as their center.
- [c14] The method in claim 9, wherein said concentric rings are equally spaced from one other.
- [c15] The method in claim 9, wherein each of said straight lines run from a point where a corresponding wire crosses an outer concentric ring line to a point where said corresponding wire crosses an inner concentric ring line.

[c16] A method of determining inductance of wires in an electronic design, said method comprising:

- a) selecting a pair of wires;
- b) adding concentric ring lines to said design to divide said pair of wires into wire segments;
- c) adding straight line segments representing each wire between points where each corresponding wire crosses said adjacent ring lines; and
- d) calculating a mutual inductance between said straight line segments, wherein said mutual inductance of said straight line segments comprises an approximate mutual inductance of said wires;
- e) repeating processes b–d for each pair of wires that cross said adjacent ring lines;
- f) summing all calculated mutual inductances as an approximate mutual inductance of said circuit design; and
- g) repeating processes a–f until all wire pairs have been processed.

[c17] The method in claim 16, wherein said calculating reduces said inductance based on the angle by which said straight line segments deviate from being parallel to one another.

[c18] The method in claim 16, wherein said concentric rings all

have the center of said circuit design as their center.

[c19] The method in claim 16, wherein said concentric rings are equally spaced from one other.

[c20] The method in claim 16, wherein each of said straight lines run from a point where a corresponding wire crosses an outer concentric ring line to a point where said corresponding wire crosses an inner concentric ring line.